



# **2001 CAPACITY ANALYSIS WORKSHEETS**

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Bay Bridge  
2001 Summer Weekend Day  
Westbound Analysis

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Operational Analysis

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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Flow Inputs and Adjustments

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Volume, V	1019	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	283	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	400	pc/h/ln

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Speed Inputs and Adjustments

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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LOS and Performance Measures

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Flow rate, vp	400	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	6.6	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1445	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	401	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	567	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	567	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	9.4	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 9 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1887	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	524	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	741	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	741	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	12.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 10 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2439	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	678	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	958	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	958	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 11 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2978	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	827	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1169	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1169	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	19.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2434	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	676	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	956	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	956	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2652	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	737	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1041	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1041	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2627	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	730	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1031	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1031	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2565	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	713	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1007	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1007	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	16.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2327	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	646	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	914	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	914	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3488	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	969	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1369	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1369	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	22.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2931	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	814	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1151	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	4.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.8	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	61.2	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1151	pc/h/ln
Free-flow speed, FFS	61.2	mi/h
Average passenger-car speed, S	61.2	mi/h
Number of lanes, N	3	
Density, D	18.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Bay Bridge  
2001 Summer Weekend Day  
Eastbound Analysis

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2935	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	815	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1679	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1679	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	28.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 8 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3572	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	992	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2044	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2044	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.0	mi/h
Number of lanes, N	2	
Density, D	36.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 9 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	3653	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1015	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2090	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

---

 LOS and Performance Measures
 

---

Flow rate, vp	2090	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	55.2	mi/h
Number of lanes, N	2	
Density, D	37.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 10 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	3524	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	979	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2017	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2017	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.3	mi/h
Number of lanes, N	2	
Density, D	35.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 11 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	3443	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	956	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1970	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

---

Flow rate, vp	1970	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.9	mi/h
Number of lanes, N	2	
Density, D	34.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	3508	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	974	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2007	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2007	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.5	mi/h
Number of lanes, N	2	
Density, D	35.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3010	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	836	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1722	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1722	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3083	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	856	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1764	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1764	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.0	mi/h
Number of lanes, N	2	
Density, D	30.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	3604	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1001	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2062	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2062	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	2	
Density, D	37.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3467	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	963	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1984	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1984	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.7	mi/h
Number of lanes, N	2	
Density, D	35.0-	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1985	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	551	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1136	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

---

 LOS and Performance Measures
 

---

Flow rate, vp	1136	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	19.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Description: 2 EB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	2201	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	611	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1259	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1259	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	21.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Bay Bridge  
2001 Summer Weekend – Friday  
Westbound Analysis

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

---

Volume, V	2434	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	676	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	956	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	956	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	2652	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	737	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1041	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1041	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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Flow Inputs and Adjustments

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Volume, V	2627	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	730	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1031	pc/h/ln

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Speed Inputs and Adjustments

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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LOS and Performance Measures

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Flow rate, vp	1031	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	3042	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	845	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1194	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1194	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	19.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2878	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	799	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1130	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1130	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	18.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	2563	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	712	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1006	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	4.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	0.8	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	61.2	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1006	pc/h/ln
Free-flow speed, FFS	61.2	mi/h
Average passenger-car speed, S	61.2	mi/h
Number of lanes, N	3	
Density, D	16.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	2435	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	676	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	956	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	956	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

Bay Bridge  
2001 Summer Weekend – Friday  
Eastbound Analysis

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3332	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	926	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1907	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1907	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	57.4	mi/h
Number of lanes, N	2	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3440	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	956	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1968	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1968	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	56.9	mi/h
Number of lanes, N	2	
Density, D	34.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3804	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1057	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2177	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2177	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	53.5	mi/h
Number of lanes, N	2	
Density, D	40.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	4013	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1115	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2296	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2296	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3972	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1103	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	2273	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2273	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	50.9	mi/h
Number of lanes, N	2	
Density, D	44.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	4011	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1114	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, vp	1.00	
Flow rate, vp	2284	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	2284	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S		mi/h
Number of lanes, N	2	
Density, D		pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND - FRIDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3146	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	874	v
Trucks and buses	5	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.976	
Driver population factor, vp	1.00	
Flow rate, vp	1791	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1791	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.0	mi/h
Number of lanes, N	2	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Bay Bridge  
2001 Average Weekday  
Westbound Analysis

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

---

Volume, V	2891	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	803	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	1135	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1135	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	18.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 8 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	2505	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	696	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	983	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	983	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	16.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 9 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1781	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	495	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	679	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	679	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	11.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 10 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1571	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	436	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	617	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	617	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	10.2	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 11 AM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1505	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	418	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	591	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

---

 LOS and Performance Measures
 

---

Flow rate, vp	591	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	9.8	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

---

Volume, V	1449	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	403	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	569	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	569	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	9.4	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

---

Volume, V	1613	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	448	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	633	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

---

Flow rate, vp	633	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	10.5	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1716	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	477	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	674	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	674	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	11.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	1761	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	489	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	691	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	691	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	11.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1698	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	472	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	667	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	667	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	11.0+	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1576	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	438	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	619	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	619	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	10.2	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 3 WB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1329	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	369	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.50	%
Segment length	0.60	mi
Trucks and buses PCE, ET	2.0	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.943	
Driver population factor, vp	1.00	
Flow rate, vp	522	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	3	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	1.6	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	3.0	mi/h
Free-flow speed, FFS	60.4	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	522	pc/h/ln
Free-flow speed, FFS	60.4	mi/h
Average passenger-car speed, S	60.4	mi/h
Number of lanes, N	3	
Density, D	8.6	pc/mi/ln
Level of service, LOS	A	

Overall results are not computed when free-flow speed is less than 55 mph.

Bay Bridge  
2001 Average Weekday  
Eastbound Analysis

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

---

 Flow Inputs and Adjustments
 

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Volume, V	1221	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	339	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	699	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	699	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	12.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 8 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1405	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	390	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	804	pc/h/ln

---

 Speed Inputs and Adjustments
 

---

Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	804	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	13.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 9 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1282	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	356	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	734	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	734	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	12.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 10 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1370	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	381	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	784	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	784	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	13.5	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 11 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1596	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	443	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	913	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	913	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	15.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1544	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	429	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	884	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	884	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	15.2	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1752	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	487	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1003	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1003	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	1792	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	498	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1025	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1025	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	17.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2185	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	607	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1250	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1250	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	21.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	2599	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	722	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1487	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1487	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	25.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3082	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	856	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1764	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1764	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.0	mi/h
Number of lanes, N	2	
Density, D	30.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: Bala Akundi  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 WEEKDAY  
 Description: 2 EB LANES

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 Flow Inputs and Adjustments
 

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Volume, V	3181	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	884	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1820	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1820	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	57.9	mi/h
Number of lanes, N	2	
Density, D	31.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Bay Bridge  
2001 Summer Weekend Day  
Reversible Lane Operation  
Westbound Analysis

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 7 AM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		1019	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		283		0	
Trucks and buses		6	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.943		1.000	
Flow rate, vp		600	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		600	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		57.5	mph	60.0	mph
Level of service, LOS		A		A	
Density, D		10.4	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 8 AM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		1445	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		401		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		842	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		842	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		57.5	mph	60.0	mph
Level of service, LOS		B		A	
Density, D		14.6	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 9 AM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		1887	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		524		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		1100	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		1100	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		57.5	mph	60.0	mph
Level of service, LOS		C		A	
Density, D		19.1	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 10 AM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		2439	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		678		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		1422	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		1422	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		57.5	mph	60.0	mph
Level of service, LOS		C		A	
Density, D		24.7	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 11 AM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		2978	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		827		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		1737	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		1737	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		56.1	mph	60.0	mph
Level of service, LOS		D		A	
Density, D		31.0	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 12 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		2695	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		749		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		1572	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		1572	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		56.9	mph	60.0	mph
Level of service, LOS		D		A	
Density, D		27.6	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 1 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		3585	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		996		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		2091	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		2091	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		54.0	mph	60.0	mph
Level of service, LOS		E		A	
Density, D		38.8	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 2 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		3333	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		926		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		1944	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		1944	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		54.9	mph	60.0	mph
Level of service, LOS		E		A	
Density, D		35.4	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 3 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction		1		2	
Lane width			12.0	ft	12.0	ft
Lateral clearance:						
Right edge			2.0	ft	6.0	ft
Left edge			6.0	ft	6.0	ft
Total lateral clearance			8.0	ft	12.0	ft
Access points per mile			0		0	
Median type			Undivided			
Free-flow speed:			Base		Measured	
FFS or BFFS			60.0	mph	60.0	mph
Lane width adjustment, FLW			0.0	mph	0.0	mph
Lateral clearance adjustment, FLC			0.9	mph	0.0	mph
Median type adjustment, FM			1.6	mph	0.0	mph
Access points adjustment, FA			0.0	mph	0.0	mph
Free-flow speed			57.5	mph	60.0	mph

## VOLUME

	Direction		1		2	
Volume, V			2565	vph	0	vph
Peak-hour factor, PHF			0.90		0.90	
Peak 15-minute volume, v15			713		0	
Trucks and buses			5	%	0	%
Recreational vehicles			0	%	0	%
Terrain type			Grade		Level	
Grade			3.50	%	0.00	%
Segment length			0.60	mi	0.00	mi
Number of lanes			2		2	
Driver population adjustment, fP			1.00		1.00	
Trucks and buses PCE, ET			2.0		1.5	
Recreational vehicles PCE, ER			3.0		1.2	
Heavy vehicle adjustment, fHV			0.952		1.000	
Flow rate, vp			1496	pcphpl	0	pcphpl

## RESULTS

	Direction		1		2	
Flow rate, vp			1496	pcphpl	0	pcphpl
Free-flow speed, FFS			57.5	mph	60.0	mph
Avg. passenger-car travel speed, S			57.2	mph	60.0	mph
Level of service, LOS			D		A	
Density, D			26.1	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 4 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		2327	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		646		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		1357	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		1357	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		57.5	mph	60.0	mph
Level of service, LOS		C		A	
Density, D		23.6	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 5 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction	1		2	
Lane width		12.0	ft	12.0	ft
Lateral clearance:					
Right edge		2.0	ft	6.0	ft
Left edge		6.0	ft	6.0	ft
Total lateral clearance		8.0	ft	12.0	ft
Access points per mile		0		0	
Median type		Undivided			
Free-flow speed:		Base		Measured	
FFS or BFFS		60.0	mph	60.0	mph
Lane width adjustment, FLW		0.0	mph	0.0	mph
Lateral clearance adjustment, FLC		0.9	mph	0.0	mph
Median type adjustment, FM		1.6	mph	0.0	mph
Access points adjustment, FA		0.0	mph	0.0	mph
Free-flow speed		57.5	mph	60.0	mph

## VOLUME

	Direction	1		2	
Volume, V		3488	vph	0	vph
Peak-hour factor, PHF		0.90		0.90	
Peak 15-minute volume, v15		969		0	
Trucks and buses		5	%	0	%
Recreational vehicles		0	%	0	%
Terrain type		Grade		Level	
Grade		3.50	%	0.00	%
Segment length		0.60	mi	0.00	mi
Number of lanes		2		2	
Driver population adjustment, fP		1.00		1.00	
Trucks and buses PCE, ET		2.0		1.5	
Recreational vehicles PCE, ER		3.0		1.2	
Heavy vehicle adjustment, fHV		0.952		1.000	
Flow rate, vp		2034	pcphpl	0	pcphpl

## RESULTS

	Direction	1		2	
Flow rate, vp		2034	pcphpl	0	pcphpl
Free-flow speed, FFS		57.5	mph	60.0	mph
Avg. passenger-car travel speed, S		54.3	mph	60.0	mph
Level of service, LOS		E		A	
Density, D		37.4	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

## OPERATIONAL ANALYSIS

Analyst: BA  
 Agency/Co:  
 Date: 8/18/02  
 Analysis Period: 6 PM  
 Highway: BAY BRIDGE WESTBOUND SPAN  
 From/To:  
 Jurisdiction:  
 Analysis Year: 2001 SUMMER WEEKEND  
 Project ID: REVERSIBLE LANE OPERATION

## FREE-FLOW SPEED

	Direction		1		2	
Lane width			12.0	ft	12.0	ft
Lateral clearance:						
Right edge			2.0	ft	6.0	ft
Left edge			6.0	ft	6.0	ft
Total lateral clearance			8.0	ft	12.0	ft
Access points per mile			0		0	
Median type			Undivided			
Free-flow speed:			Base		Measured	
FFS or BFFS			60.0	mph	60.0	mph
Lane width adjustment, FLW			0.0	mph	0.0	mph
Lateral clearance adjustment, FLC			0.9	mph	0.0	mph
Median type adjustment, FM			1.6	mph	0.0	mph
Access points adjustment, FA			0.0	mph	0.0	mph
Free-flow speed			57.5	mph	60.0	mph

## VOLUME

	Direction		1		2	
Volume, V			2931	vph	0	vph
Peak-hour factor, PHF			0.90		0.90	
Peak 15-minute volume, v15			814		0	
Trucks and buses			5	%	0	%
Recreational vehicles			0	%	0	%
Terrain type			Grade		Level	
Grade			3.50	%	0.00	%
Segment length			0.60	mi	0.00	mi
Number of lanes			2		2	
Driver population adjustment, fP			1.00		1.00	
Trucks and buses PCE, ET			2.0		1.5	
Recreational vehicles PCE, ER			3.0		1.2	
Heavy vehicle adjustment, fHV			0.952		1.000	
Flow rate, vp			1709	pcphpl	0	pcphpl

## RESULTS

	Direction		1		2	
Flow rate, vp			1709	pcphpl	0	pcphpl
Free-flow speed, FFS			57.5	mph	60.0	mph
Avg. passenger-car travel speed, S			56.3	mph	60.0	mph
Level of service, LOS			D		A	
Density, D			30.4	pc/mi/ln	0.0	pc/mi/ln

Overall results are not computed when free-flow speed is less than 45 mph.

Bay Bridge  
2001 Summer Weekend Day  
Reversible Lane Operation  
Eastbound Analysis  
(2 Lanes, 80 Percent Traffic)

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

---

 Flow Inputs and Adjustments
 

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Volume, V	2348	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	652	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1344	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1344	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	23.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 7 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2858	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	794	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1635	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1635	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	28.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 9 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2922	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	812	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1672	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1672	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	28.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 10 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2819	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	783	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1613	pc/h/ln

---

 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1613	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	27.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 11 AM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2754	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	765	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1576	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1576	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	27.1	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 12 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2806	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	779	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1606	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1606	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	27.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 1 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2408	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1378	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1378	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	23.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 2 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2466	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	685	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1411	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1411	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	24.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 3 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2883	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	801	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1650	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1650	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 4 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	2774	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	771	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1587	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1587	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 5 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	1588	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	441	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	909	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	909	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	15.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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 Operational Analysis
 

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Analyst: BKA  
 Agency or Company: Parsons  
 Date Performed: 8/13/02  
 Analysis Time Period: 6 PM  
 Freeway/Direction: BAY BRIDGE EASTBOUND  
 From/To:  
 Jurisdiction: Anne Arundel County  
 Analysis Year: 2001  
 Description: REVERSIBLE OPERATION 2 LANES 80% EB TRAFFIC

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 Flow Inputs and Adjustments
 

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Volume, V	1761	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	489	v
Trucks and buses	6	%
Recreational vehicles	0	%
Terrain type:	Grade	
Grade	3.00	%
Segment length	0.70	mi
Trucks and buses PCE, ET	1.5	
Recreational vehicle PCE, ER	3.0	
Heavy vehicle adjustment, fHV	0.971	
Driver population factor, vp	1.00	
Flow rate, vp	1008	pc/h/ln

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 Speed Inputs and Adjustments
 

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Lane width	12.0	ft
Right-shoulder lateral clearance	2.0	ft
Interchange density	0.50	interchange/mi
Number of lanes, N	2	
Free-flow speed:	Ideal	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	0.0	mi/h
Lateral clearance adjustment, fLC	2.4	mi/h
Interchange density adjustment, fID	0.0	mi/h
Number of lanes adjustment, fN	4.5	mi/h
Free-flow speed, FFS	58.1	mi/h
	Urban Freeway	

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 LOS and Performance Measures
 

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Flow rate, vp	1008	pc/h/ln
Free-flow speed, FFS	58.1	mi/h
Average passenger-car speed, S	58.1	mi/h
Number of lanes, N	2	
Density, D	17.3	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.